CLAIMS

[cl001] 1. A method for curing a composite material comprising the steps of:

providing a curing light that includes

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light,

an elongate heat sink with a proximal end and a distal end, said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,

a mounting platform located at said elongate heat sink distal end, said mounting platform being adapted to have a LED chip module mounted on it, and

an LED chip module mounted on said mounting platform, said LED chip module including

a primary heat sink, said primary heat sink having a smaller mass than said elongate heat sink,

a well on said primary heat sink for mounting an LED chip,

an LED chip mounted in said well,

a cover that provides protective covering for said LED chip and which permits light emitted by said LED chip to pass through it to provide usable light exiting from said light module,

powering said LED chip with a pulsed current input at power level I in alternating periods of generally constant intensity current input to the chip followed by periods of rest with no current input,

permitting light to be output from the curing light at an average power output level that resembles a continue wave output in use,

applying said light to a material to be light cured.

[cl002] 2. A method as recited in claim 1 wherein said average power output level is greater than the power output level that would result from powering the same chip with a continuous current input at level I instead of pulsed current input.

[cl003] 3. A method as recited in claim 1 wherein said light output from the curing light is output at an angle of from about 30 degrees to about 150 degrees with respect to said longitudinal axis.

[cl004] 4. A method as recited in claim 1 wherein I is from about 25 milliamps to about 2 amps.

[cl005] 5. A method as recited in claim 1 wherein I is from about 350 milliamps to about 1.2 amps of current.

[cl006] 6. A method as recited in claim 1 wherein I is more than about 100 milliamps of current.

[cl007] 7. A method for curing a composite material comprising the steps of:

providing a curing light that includes

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light, said want having a longitudinal axis,

a secondary heat sink, said elongate heat sink having a longitudinal axis,

a primary heat sink attached to said secondary heat sink, and

a light emitting semiconductor chip attached to said primary heat sink,

powering said chip with a pulsed current input at power level I in alternating periods of generally constant intensity current input to the chip followed by periods of rest with no current input,

permitting light to be output from the curing light at an average power output level that resembles a continue wave output in use,

applying said light to a material to be light cured.

[cl008] 8. A method as recited in claim 7 wherein said average power output level is greater than the power output level that would result from powering the same chip with a continuous current input at level I instead of pulsed current input.

[cl009] 9. A method as recited in claim 7 wherein said light output from the curing light is output at an angle of from about 30 degrees to about 150 degrees with respect to said longitudinal axis.

[cl010] 10. A method as recited in claim 7 wherein I is from about 25 milliamps to about 2 amps.

[cl011] 11. A method as recited in claim 7 wherein I is from about 350 milliamps to about 1.2 amps of current.

[cl012] 12. A method as recited in claim 7 wherein I is more than about 100 milliamps of current.

[cl013] 13. A method for curing a composite material comprising the steps of:

providing a curing light that includes

a wand adapted to be grasped by a human hand for use in positioning and manipulating the curing light, said want having a longitudinal axis,

a primary heat sink, and

a light emitting semiconductor chip attached to said primary heat sink,

a plurality of epitaxial layers in said light emitting semiconductor chip,

at least one of said epitaxial layers being an active layer,

powering said chip with a pulsed current input at power level I in alternating periods of generally constant intensity current input to the chip followed by periods of rest with no current input,

permitting said current input to said chip to case photons to be emitted by said active layer of said chip,

permitting said photons to exit the curing light as light, said light output from the curing light having an average power output level, and

applying said light to a material to be light cured.

[cl014] 14. A method as recited in claim 13 wherein said light output has an average power level is greater than the light output power level that would result from powering said chip a continuous current input at level I instead of pulsed current input.

[cl015] 15. A method as recited in claim 13 wherein said light output from the curing light is output at an angle of from about 30 degrees to about 150 degrees with respect to said longitudinal axis.

[cl016] 16. A method as recited in claim 13 wherein I is from about 25 milliamps to about 2 amps.

[cl017] 17. A method as recited in claim 13 wherein I is from about 350 milliamps to about 1.2 amps of current.

[cl018] 18. A method as recited in claim 13 wherein I is more than about 100 milliamps of current.